

IN THE CLAIMS

1. (Previously presented) A vascular prosthesis, comprising a generally tubular portion and an end formation configured for surgical connection to an opening formed in a blood vessel, said tubular portion including a generally uniform surface and a first diameter that tapers to a smaller second diameter adjacent said end formation, said end formation defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the tubular portion at the first diameter.

2. (Previously presented) The vascular prosthesis according to claim 1, wherein said enlarged chamber comprises a first diameter parallel to an axis of the tubular portion and a second diameter transverse to the axis of the tubular portion, wherein said enlarged chamber first diameter is longer than said enlarged chamber second diameter, said enlarged chamber first diameter corresponding to a heel and a toe of the end formation, wherein a transition between said tubular portion and said toe is outwardly initially convex before a final concave portion.

3. (Original) The vascular prosthesis according to claim 1, wherein said enlarged chamber is configured to promote localized movement of blood having a non-laminar nature with a shear stress inducing relationship to a wall of said blood vessel.

4. (Previously presented) The vascular prosthesis according to claim 2, wherein a transition between said tubular portion and said heel is generally outwardly concave.

5. (Previously presented) The vascular prosthesis according to claim 2, wherein portions of the end formation corresponding to opposing ends of said enlarged chamber second diameter are generally outwardly convex.

6. (Previously presented) The vascular prosthesis according to claim 2, wherein said enlarged chamber first diameter is between approximately 14 and 36 mm and said enlarged chamber second diameter is no greater than approximately 14 mm.

7. (Previously presented) The vascular prosthesis according to claim 1, further comprising a second end formation.

8. (Previously presented) The vascular prosthesis according to claim 7, wherein said second end formation comprises a second enlarged chamber comprising a first diameter parallel to an axis of the tubular portion and a second diameter transverse to the axis of the tubular portion, wherein said second enlarged chamber first diameter is longer than said second enlarged chamber second diameter, said second enlarged chamber first diameter corresponding to a heel and toe of the second end formation, wherein a transition between said tubular portion and said toe is outwardly initially convex before a final concave portion.

9. (Previously presented) The vascular prosthesis according to claim 8, wherein a transition between said tubular portion and said heel of said second enlarged chamber is generally outwardly concave.

10. (Previously presented) The vascular prosthesis according to claim 8, wherein portions of the end formation corresponding to opposing ends of said second diameter of said second enlarged chamber are generally outwardly convex.

11. (Previously presented) The vascular prosthesis according to claim 8, further comprising a decreased diameter portion adjacent said second end formation.

12-13. Canceled.

14. (Previously presented) The vascular prosthesis according to claim 1, wherein the tubular portion and end formation are comprised of a material other than autologous vascular tissue.

15. (Previously presented) The vascular prosthesis according to claim 1, wherein the tubular portion and end formation are comprised of a polytetrafluoroethylene material.

16. (Previously presented) The vascular prosthesis according to claim 7, wherein the tubular portion, end formation and second end formation are comprised of a material other than autologous vascular tissue.

17. (Previously presented) The vascular prosthesis according to claim 7, wherein the tubular portion, end formation and second end formation are comprised of a polytetrafluoroethylene material.

18. (Previously presented) A vascular prosthesis, comprising a tube and an enlargement positioned at a distal end of the tube, the tube comprising a first diameter portion extending along a majority of the length of the tube and a second diameter portion positioned adjacent the enlargement, the first diameter portion having a diameter greater than a diameter of the second diameter portion, the enlargement defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the first diameter portion.

19. (Previously presented) The vascular prosthesis according to claim 18, wherein the open end perimeter has a generally oval shape.

20. (Previously presented) The vascular prosthesis according to claim 18, wherein the tube and enlargement are comprised of a polytetrafluoroethylene material.

21. (Previously presented) A vascular prosthesis, comprising a tube, a first enlargement positioned at a distal end of the tube and a second enlargement positioned at a proximal end of the tube, the tube comprising a first diameter portion extending along a majority of the length of the tube, a second diameter portion with a diameter less than a diameter of the first diameter portion positioned adjacent the first enlargement and a third diameter portion with a diameter less than a diameter of the first diameter portion positioned adjacent the second enlargement, at least one of the first and second enlargements defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the first diameter portion.

22. (Previously presented) The vascular prosthesis according to claim 21, wherein the tube, first enlargement and second enlargement are comprised of a polytetrafluoroethylene material.

23. (Previously presented) A vascular prosthesis, comprising a continuous expanded polytetrafluoroethylene structure with a generally uniform inner surface, the structure comprising a tubular part and an enlargement at a distal end of the tubular part, the inner surface of the enlargement defining an enlarged chamber including a distal end defining an oval opening with a major diameter larger than an inner diameter of the tubular part.

24. (Previously presented) The vascular prosthesis according to claim 23, wherein the tubular part comprises a first diameter portion extending along a majority of a length of the tubular part and a second diameter portion positioned adjacent the enlargement, wherein a diameter of the first diameter portion is greater than a diameter of the second diameter portion.

25-26. Canceled.

27. (Previously presented) A vascular prosthesis, comprising: a tube defining a central axis, the tube having a first portion with a constant inner dimension along a first portion of the central axis and a second portion with a variable inner dimension along a second portion of the central axis, the second portion defining a non-circular opening at an end of the tube, the non-circular opening defining a cross-sectional area that is larger than a cross-sectional area of the first portion of the tube.

28. (Previously presented) A method of directing the movement of a fluid through a vascular prosthesis, comprising:

directing the fluid through a generally tubular portion of the prosthesis, the tubular portion having a generally uniform surface and a first diameter that tapers to a smaller second diameter adjacent to an end formation of the prosthesis; and

directing the fluid through the end formation, the end formation configured for surgical connection to an opening formed in a blood vessel, the end formation defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the tubular portion at the first diameter.

29. (Previously presented) A method of directing the movement of a fluid through a vascular prosthesis, comprising:

directing the fluid through a tube, the tube having a first diameter portion extending along a majority of a length of the tube and a second diameter portion positioned adjacent the an enlargement positioned at a distal end of the tube, the first diameter portion having a diameter greater than a diameter of the second diameter portion; and

directing the fluid through the enlargement, the enlargement defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the first diameter portion.

30. (Previously presented) A method of directing the movement of a fluid through a vascular prosthesis, comprising:

directing the fluid through a tube, the tube having a first diameter portion extending along a majority of the length of the tube, a second diameter portion with a diameter less than a diameter of the first diameter portion positioned adjacent a first enlargement positioned at a distal end of the tube and a third diameter portion with a diameter less than a diameter of the first diameter portion positioned adjacent a second enlargement positioned at a proximal end of the tube; and

directing the fluid through at least one of the first and second enlargements, the at least one of the first and second enlargements defining an enlarged chamber that terminates at an open end of the vascular prosthesis to define an opening, the opening having a non-circular perimeter outlining a cross-sectional area larger than a cross-sectional area of the first diameter portion.

31. (Previously presented) A method of directing the movement of a fluid through a vascular prosthesis, comprising:

directing the fluid through a continuous expanded polytetrafluoroethylene structure with a generally uniform inner surface, the structure having a tubular part and an enlargement at a distal end of the tubular part, the inner surface of the enlargement defining an enlarged chamber including a distal end defining an oval opening with a major diameter larger than an inner diameter of the tubular part.

32. (Previously presented) A method of directing the movement of a fluid through a vascular prosthesis, comprising:

directing the fluid through a first portion of a tube having a constant inner dimension along a first portion of a central axis defined by the prosthesis;

directing the fluid through a second portion of the tube having a variable inner dimension along a second portion of the central axis; and

directing the fluid through a non-circular opening defined by the second portion at an end of the tube, the non-circular opening defining a cross-sectional area that is larger than a cross-sectional area of the first portion of the tube.